

IN THE CLAIMS:

All of the pending claims are set forth below. The status of each claims is indicated with one of (currently amended) or (cancelled). Please CANCEL claims 4, 16, 25-28, 33-35, 47, 54, 59 and 60 without prejudice or disclaimer. Please AMEND claims 1-3 and 15 in accordance with the following:

1. (currently amended) A method for optical transmission adopting dispersion compensation, comprising the steps of:
 - (a) providing an optical fiber transmission line composed of a plurality of segments each having a length falling within a predetermined range, said plurality of segments including a plurality of fiber types;
 - (b) providing an optical transmitter for supplying an optical signal to said optical fiber transmission line at one end of said optical fiber transmission line;
 - (c) providing an optical receiver for receiving said optical signal from said optical fiber transmission line at the other end of said optical fiber transmission line;
 - (d) providing an optical amplifier between any two adjacent ones of said segments; and
 - (e) providing a dispersion compensator in association with each of said optical transmitter, said optical receiver, and said optical amplifier according to said optical fiber type and a dispersion value of said optical fiber transmission line immediately upstream thereof, and said optical fiber type and said dispersion value of said optical fiber transmission line immediately downstream thereof wherein,
said dispersion compensator providing provides a dispersion selected from a plurality of stepwise varying dispersions determined according to said predetermined range, wherein,
said optical transmitter comprises a plurality of E/O converters each for converting an electrical signal into said optical signal, a front stage amplifier and a rear stage amplifier cascaded with each other, and an optical multiplexer having a plurality of input ports respectively connected to said plurality of E/O converters and an output port connected to said front stage

amplifier; and

~~said dispersion compensator being provided between said front stage amplifier and said rear stage amplifier.~~

2. (currently amended) A method according to claim 1, wherein ~~each of said segments is formed from~~said fiber types of said optical fiber transmission line include a single-mode fiber type having a zero-dispersion wavelength of about 1.3 μ m and a dispersion compensation fiber type having a zero-dispersion wavelength of about 1.55 μ m.

3. (currently amended) A method according to claim 42, wherein ~~said optical signal has a wavelength of about 1.55 μ m~~dispersion compensator is not provided in said optical transmitter in a case where ~~said fiber type of said optical fiber transmission line immediately downstream of said optical transmitter is said dispersion compensation fiber type, and is not provided in said optical amplifier in case where~~ said fiber type of said optical fiber transmission line immediately upstream of the optical amplifier is said dispersion compensation fiber type.

4-14. (cancelled)

15. (currently amended) A system for optical transmission adopting dispersion compensation, comprising:

an optical fiber transmission line composed of a plurality of segments each having a length falling within a predetermined range, said plurality of segments including a plurality of fiber types;

an optical transmitter for supplying an optical signal to said optical fiber transmission line from one end thereof;

an optical receiver for receiving said optical signal from the other end of said optical fiber transmission line;

an optical amplifier provided between any two adjacent ones of said segments; and
a dispersion compensator in associate with each of said optical transmitter, said optical receiver, and said optical amplifier according to said optical fiber type and a dispersion value of said optical fiber transmission line immediately upstream thereof, and said optical fiber type and said dispersion value of said optical fiber transmission line immediately downstream thereof,
providing a dispersion selected from a plurality of stepwise varying dispersions determined according to said predetermined range,

wherein,

said optical transmitter comprises a plurality of E/O converters each for converting an electrical signal into said optical signal, a front stage amplifier and a rear stage amplifier cascaded with each other, and an optical multiplexer having a plurality of input ports respectively connected to said plurality of E/O converters and an output port connected to said front stage amplifier; and

said dispersion compensator being provided provides a dispersion selected from a plurality of stepwise varying dispersions determined according to said predetermined range between said front stage amplifier and said rear stage amplifier.

16-62. (cancelled)